

WHAT IS CLAIMED IS:

1. A form processing apparatus for reading a field data source storing data to be overlaid onto fields defined in a form and overlaying the data of the field data source onto the fields in a form; the form processing apparatus comprising:

setting means for setting a character string for each of the fields as field attribute information, the character string being composed of characters

10 indicating a format of data to be overlaid; and

overlaid means for extracting data of the field data source based on the character string and overlaying the data onto the field.

15 2. A form processing apparatus for reading a field data source storing data to be overlaid onto fields defined in a form and overlaying the data of the field data source onto the fields in a form; the form processing apparatus comprising:

20 reading means for reading a character string set for each of the fields as field attribute information, the character string being composed of characters indicating a format of data to be overlaid, and

overlaid means for extracting data of the field

25 data source based on the character string and overlaying the data onto the field.

3. A form processing method for reading a field data source storing data to be overlaid onto fields defined in a form and overlaying the data of the field data source onto the fields in a form; the form processing method comprising the steps of:

5                   setting a character string for each of the fields as field attribute information, the character string being composed of characters indicating a format of data to be overlaid; and

10                  overlaying the data of the field data source onto the fields by extracting the data based on the character string.

4. A form processing method for reading a field data source storing data to be overlaid onto fields defined in a form and overlaying the data of the field data source onto the fields in a form; the form processing method comprising the steps of:

15                  reading a character string set for each of the fields as field attribute information, the character string being composed of characters indicating a format of data to be overlaid, and

20                  overlaying the data of the field data source onto the fields by extracting the data based on the character string.

5. A program for causing a computer to execute form processing for reading a field data source storing data to be overlaid onto fields defined in a form and overlaying the data of the field data source onto the fields in a form; the program comprising the steps of:

5        setting a character string for each of the fields as field attribute information, the character string being composed of characters indicating a format of data to be overlaid; and

10        overlaying the data of the field data source onto the fields by extracting the data based on the character string.

6. A program for causing a computer to execute form processing for reading a field data source storing data to be overlaid onto fields defined in a form and overlaying the data of the field data source onto the fields in a form; the program comprising the steps of:

15        reading a character string set for each of the fields as field attribute information, the character string being composed of characters indicating a format of data to be overlaid, and

20        overlaying the data of the field data source onto the fields by extracting the data based on the character string.

25        character string.

7. The program according to claim 5; wherein the character string is composed of type specification characters, skip characters, fixed characters or a combination thereof; the type specification characters  
5 indicating how corresponding data in the data of the field data source to be overlaid onto a field should be interpreted; the skip characters indicating that any corresponding data in the data of the field data source to be overlaid onto a field should be skipped; and the  
10 fixed characters indicating that corresponding particular data in the data of the field data source to be overlaid onto a field should be skipped.

8. The program according to claim 5; wherein the  
15 overlaying step comprises the steps of:  
    cutting a character string to be sequentially processed from the character string as a picture word;  
    cutting data of the field data source corresponding to the cut picture word as a field data  
20 word; and  
    determining whether or not the picture word is composed of type specification characters and generating a data table having a pair of the picture word and the field data word when the picture word is  
25 determined to be composed of type specification characters; and

wherein the overlaying step overlays the data of the field data source onto the fields based on the data table.

5 9. The program according to claim 8; wherein the field attribute information includes data types indicating kinds of data of the field data source to be overlaid; and

10 wherein the overlaying step determines whether or not the number of the cut picture words is correct based on the data type, and, if the picture words lack in number, adds the missing picture words and field data words corresponding to the missing picture words, and then complements the added field data words.

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10. The program according to claim 9; wherein the overlaying step determines whether or not the data of the field data source is valid based on the data type, and overlays the data onto the field if the data is 20 valid.

11. A form processing apparatus for reading a field data source storing data to be overlaid onto fields defined in a form and overlaying the data of the field 25 data source onto the fields in a form; the form processing apparatus comprising:

reading means for reading a character string included in field attribute information set for each of the fields, the character string being composed of characters indicating the format of data to be overlaid;

5       recognizing means for recognizing, when overlaying the data onto the field, the repetition number of repeatedly overlaying predetermined data from the read character string; and

10      overlaying means for repeatedly overlaying the predetermined data onto the field based on the recognized repetition number.

12. A form processing apparatus for reading a field data source storing data to be overlaid onto fields defined in a form and overlaying the data of the field data source onto the fields in a form; the form processing apparatus comprising:

15       reading means for reading a character string included in field attribute information set for each of the fields, the character string being composed of characters indicating the format of data to be overlaid;

20       recognizing means for recognizing a character indicating that the data length of the data to be overlaid is variable, from the character string;

calculating means for calculating difference  
between the data length derived from the character  
string and data length of data of the field data source  
to be overlaid onto the field, that is corresponding to  
5 the character string; and  
overlaid means for overlaying the data of the  
field data source onto the field based on data length  
of the variable-data-length data recognized by the  
recognizing means by determining the data length based  
10 on the difference calculated by the calculating means.

13. A form processing method for reading a field data  
source storing data to be overlaid onto fields defined  
in a form and overlaying the data of the field data  
15 source onto the fields in a form; the form processing  
method comprising the steps of:

reading a character string included in field  
attribute information set for each of the fields, the  
character string being composed of characters  
20 indicating the format of data to be overlaid;  
recognizing, when overlaying the data onto the  
field, the repetition number of repeatedly overlaying  
predetermined data, from the read character string,;  
and  
25 repeatedly overlaying the predetermined data onto  
the field based on the recognized repetition number.

14. A form processing method for reading a field data source storing data to be overlaid onto fields defined in a form and overlaying the data of the field data source onto the fields in a form; the form processing method comprising the steps of:

- reading a character string included in field attribute information set for each of the fields, the character string being composed of characters indicating the format of data to be overlaid;
- 10 recognizing a character indicating that the data length of the data to be overlaid is variable, from the character string;
- calculating difference between the data length derived from the character string and data length of
- 15 data of the field data source to be overlaid onto the field, that is corresponding to the character string; and
- overlaid the data of the field data source onto the field based on data length of the variable-data-length data recognized by the recognizing step by determining the data length based on the difference calculated by the calculating step.

15. A program for causing a computer to execute form processing for reading a field data source storing data to be overlaid onto fields defined in a form and

overlaying the data of the field data source onto the fields in a form; the program comprising the steps of:

reading a character string included in field attribute information set for each of the fields, the  
5 character string being composed of characters indicating the format of data to be overlaid;  
recognizing, when overlaying the data onto the field, the repetition number of repeatedly overlaying predetermined data, from the read character string; and  
10 repeatedly overlaying the predetermined data onto the field based on the recognized repetition number.

16. A program for causing a computer to execute form processing for reading a field data source storing data to be overlaid onto fields defined in a form and overlaying the data of the field data source onto the fields in a form; the program comprising the steps of:

reading a character string included in field attribute information set for each of the fields, the  
20 character string being composed of characters indicating the format of data to be overlaid;  
recognizing a character indicating that the data length of the data to be overlaid is variable, from the character string;  
25 calculating difference between the data length derived from the character string and length of data of

the field data source to be overlaid onto the field,  
that is corresponding to the character string; and  
overlaid the data of the field data source onto  
the field based on data length of the variable-data-  
5 length data recognized by the recognizing step by  
determining the data length based on the difference  
calculated by the calculating step.

17. The program according to claim 15; wherein the  
10 character string is composed of type specification  
characters, skip characters, fixed characters,  
repetition characters or a combination thereof; the  
type specification characters indicating how  
corresponding data in the data of the field data source  
15 to be overlaid onto a field should be interpreted; the  
skip characters indicating that any corresponding data  
in the data of the field data source to be overlaid  
onto a field should be skipped; the fixed characters  
indicating that corresponding particular data in the  
20 data of the field data source to be overlaid onto a  
field should be skipped; and the repetition characters  
indicating that corresponding data in the data of the  
field data source to be overlaid onto a field should be  
overlaid repeatedly.

18. The program according to claim 17; wherein the repetition character means that  $\alpha$  should be n times when expressed as  $\alpha(n)$ .

5 19. The program according to claim 17; wherein the repetition character means that data length of data corresponding to the repetition character is variable when expressed as  $\alpha(0)$ .

10 20. The program according to claim 15; wherein the overlaying step comprises:

          cutting a character string to be sequentially processed from the character string as a picture word;

          cutting data of the field data source

15 corresponding to the cut picture word as a field data word; and

          determining whether or not the picture word is composed of type specification characters, and generating a data table having a pair of the picture

20 word and the field data word when the picture word is determined to be composed of type specification characters; and

          wherein the overlaying step overlays the data of the field data source onto the fields based on the data

25 table.

21. The program according to claim 20; wherein the field attribute information includes data types indicating kinds of data of the field data source to be overlaid; and

5       wherein the overlaying step determines whether or not the number of the cut picture words is correct based on the data type, and, if the picture words lack in number, adds the missing picture words and field data words corresponding to the missing picture words,  
10 and then complements the added field data words.

22. The program according to claim 21, wherein the overlaying step determines whether or not the data of the field data source is valid based on the data type,  
15 and overlays the data onto the field if the data is valid.